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ABSTRACT

Aptitude tests are defined in contrast to intelligence and achievement tests. Although aptitude tests, like intelligence tests, measure a student's overall performance across a broad range of mental capabilities, the former also often include items that measure more specialized abilities (such as verbal and numerical skills) that predict scholastic performance in educational programs. Compared to achievement tests, aptitude tests cover a broader area and a wider range of experiences. Research data indicate that individually administered aptitude tests identify predictors of future scholastic achievement, compare performance across students, provide a profile of students' strengths and weaknesses, assess differences among individuals, identify hidden talents in some children, and provide information about handicapped students. Aptitude tests provide information for instructional, administrative, and guidance purposes. Overall, research on the improvement of aptitude test scores is inconclusive, but it does indicate that effective training approaches involve the following: longitudinal, non-intrusive techniques; interaction of student abilities and training methods; practice and feedback; incorporating other strengths of the student; and focus on aspects of intellectual aptitude that have been identified as trainable. A five-item list of additional reading materials is included. (TJH)

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MEASURING APTITUDE

by Gayle L. Macklen, Manchester (Mass.) School System

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Measuring Aptitude

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The terms *intelligence*, *ability*, and *aptitude* are often used interchangeably to refer to behavior that is used to predict future learning or performance. However, subtle differences exist between the terms. The tests designed to measure these attributes differ in several significant ways.

This digest defines aptitude tests in contrast to intelligence tests and achievement tests. It also looks at the value of aptitude tests and examines how the results of aptitude should be used. Finally, this digest discusses whether students can improve their scores on these tests.

What Is an Aptitude Test?

Like intelligence tests, aptitude tests measure a student's overall performance across a broad range of mental capabilities. But aptitude tests also often include items which measure more specialized abilities -- such as verbal and numerical skills -- that predict scholastic performance in educational programs.

Compared to achievement tests, aptitude tests cover a broader area and look at a wider range of experiences. Achievement tests tend to measure recent learning and are closely tied to particular school subjects.

Aptitude tests tell us what a student brings to the task regardless of the specific curriculum that the student has already experienced. The difference between aptitude and achievement tests is sometimes a matter of degree. Some aptitude and achievement tests look a lot alike. In fact, the higher a student goes in levels of education, the more the content of aptitude tests resembles achievement tests. This is because the knowledge that a student has already accumulated is a good predictor of success at advanced levels.

What Is the Value of Aptitude Testing?

Research data show that individually administered aptitude tests have the following qualities:

- They are excellent predictors of future scholastic achievement.
- They provide ways of comparing a child's performance with that of other children in the same situation.
- They provide a profile of strengths and weaknesses.
- They assess differences among individuals.
- They have uncovered hidden talents in some children, thus improving their educational opportunities.
- They are valuable tools for working with handicapped children.

In addition, group aptitude tests -- usually given as part of a group achievement battery of tests -- can be given quickly and inexpensively to large numbers of children. Children who obtain extreme scores can be easily identified to receive further specialized attention. Aptitude tests are valuable in making program and curricula decisions. They can also be used for grouping students as long as grouping is flexible.

How Can We Use Aptitude Test Results?

In general, aptitude test results have three major uses:

- instructional

  Teachers can use aptitude test results to adapt their curricula to match the level of their students, or to design assignments for students who differ widely. Aptitude test scores can also help teachers form realistic expectations of students. Knowing something about the aptitude level of students in a given class can help a teacher identify which students are not learning as much as could be predicted on the basis of aptitude

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scores. For instance, if a whole class were performing less well than would be predicted from aptitude test results, then curriculum, objectives, teaching methods, or student characteristics might be investigated.

- administrative

  Aptitude test scores can identify the general aptitude level of a high school, for example. This can be helpful in determining how much emphasis should be given to college preparatory programs. Aptitude tests can be used to help identify students to be accelerated or given extra attention, for grouping, and in predicting job training performance.

- guidance

  Guidance counselors use aptitude tests to help parents develop realistic expectations for their child's school performance and to help students understand their own strengths and weaknesses.

Can Aptitude Be Improved?

Although studies seem to suggest that aptitude test scores cannot be improved, other research shows that that may not be the case. Tests such as the Scholastic Aptitude Tests contain many questions that are content-specific, particularly in math areas. Performance on these specific types of items is trainable.

Some experts feel that short-term cramming might not affect aptitude test scores. However, long-term instruction in broad cognitive skills might improve general test performance. Cognitive theory and research suggest that learning ability can be improved by training students in learning strategies. Improving academic aptitude may be possible through a systematic curriculum that complements direct training in learning strategies with both the development of general thinking approaches and the application of those approaches over a variety of different tasks and content areas.

What has been learned about training to improve aptitude can be summarized as follows:

- Attempts to train aptitude must go well beyond practice and feedback. What's needed is intensive training in strategies involved in task performance along with higher level monitoring and control strategies involved in guiding performance and in transferring skills to new areas.

- Educational efforts to improve aptitude need to be long-term.

- Abilities of students and methods of training interact. Attempts to train strategies must fit the tested aptitudes of students.

- Practice and feedback can be effective when students are already proficient in the ability to be trained.

- Intrusive training may be harmful to high aptitude students.

- Training ability works best when treatment utilizes some of the student's other strengths.

- Some aspects of intellectual aptitude may be more easily trained than others.

Additional Reading

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